

The ore mineral appears as small grains often of approximately octahedral shape.

Feldspar is entirely absent.

The Deccan traps are a thick series of basaltic lavas of the plateau type.² They are normally of ordinary basaltic composition and are made up almost exclusively of augite and plagioclase. The present rock is decidedly different. There is no information regarding its mode of occurrence and therefore no definite assurance that it is a lava, but the extremely fine prisms of augite suggest a rate of cooling that is consistent with such a mode of occurrence.

It is not possible to interpret the rock as an ordinary basalt in which analcite has replaced plagioclase for the augite has neither the granular character produced by extremely rapid chilling nor the ophitic character produced by somewhat less rapid chilling in ordinary basalt. The minute prisms are, indeed, such as appear to be characteristic of alkaline basalts. The presence of nephelite suggests the possibility that the rock was a nephelite basalt now strongly analcitized.

The evidence that analcite takes the place of other minerals, principally nephelite, is not clearly to be made out and is rather suggested than proved by its patchy distribution and the fact that nephelite rather than analcite is the matrix of the pyroxene prisms where they are most closely crowded. Occasionally, however, a seam of analcite is to be seen lying along the imperfect prismatic cleavage of nephelite. On the whole it would appear that the rock is a nephelite basalt which has suffered analcitzation, but the possibility that it is an analcite basalt and the analcite dominantly primary can not be excluded.

In either case it is apparently the first example from the Deccan traps of a rock of such strongly alkaline affinities.

I am much indebted to Doctor Washington for the opportunity of examining his collection of these rocks.

BOTANY.—*New Asteraceae from Costa Rica.* S. F. BLAKE, Bureau of Plant Industry.¹

The four new species described in this paper form part of the extensive collections of plants made in Costa Rica in 1924 and 1925-6 by Paul C. Standley of the U. S. National Museum. Notes on certain other species are added.

² H. S. WASHINGTON. *Deccan Traps and other Plateau Basalts.* Bull. Geol. Soc. Amer., **33**: 765-803. 1922.

¹ Received December 23, 1926.

Archibaccharis irazuensis Blake

Hemibaccharis irazuensis Blake, Contr. U. S. Nat. Herb. 20: 551. 1924.
 Dr. Johann Mattfeld of Berlin has called my attention to the fact that in describing the genus *Hemibaccharis*² I overlooked Heering's genus *Archibaccharis*,³ founded on *Baccharis hieraciifolia* Hemsl. and *B. hirtella* DC. Of the 15 species recognized in my treatment, several have already been transferred to *Archibaccharis* in Standley's "Trees and Shrubs of Mexico." The six following species (all Mexican or Guatemalan) require transfer.

Archibaccharis corymbosa (Donn. Smith) Blake

Diplostephium corymbosum Donn. Smith, Bot. Gaz. 23: 8. 1897.
Hemibaccharis corymbosa Blake, Contr. U. S. Nat. Herb. 20: 553. 1924.

Archibaccharis flexilis Blake

Hemibaccharis flexilis Blake, Contr. U. S. Nat. Herb. 20: 549. 1924.

Archibaccharis glandulosa (Greenm.) Blake

Baccharis glandulosa Greenm. Proc. Amer. Acad. 40: 36. 1904.
Hemibaccharis glandulosa Blake, Contr. U. S. Nat. Herb. 20: 546. 1924.

Archibaccharis hieracioides Blake

Baccharis hieraciifolia Hemsl. Biol. Centr. Amer. Bot. 2: 129. 1881.
 Not *B. hieracifolia* Lam. 1783.
Archibaccharis hieraciifolia Heer. Jahrb. Hamb. Wiss. Anst. 21: Beiheft 3: 40. 1904, as to synonymy only.
Hemibaccharis hieracioides Blake, Contr. U. S. Nat. Herb. 20: 547. 1924.

Heering's treatment of this species is far from clear. Although he published the name as "*A. hieraciifolia* Heering n. spec." and cited Hemsley's synonym with a mark of interrogation, he apparently did not consider the plant referred to (*Pringle* 6257) a new species, for he gave no diagnosis, merely remarking that Hemsley's description called for leaves attenuate at both ends and petioled or subsessile, while in his plant they were sessile and auriculate. *Pringle* 6257 is in fact the type number of *Baccharis glandulosa* Greenm. (1904), a species distinct from *B. hieraciifolia* Hemsl. In the case of his second numbered species, Heering was similarly ambiguous, listing it as "*A. hirtella* Heering n. spec.," but citing "*B. hirtella* DC. . . . ex descr." and "*B. hirtella* Klatt! Leopoldina XX. (1884), p. 4" among the synonyms. On the whole, it seems advisable to treat these two names of Heering as representing new combinations rather than new species. A third species, *Archibaccharis schultzei* Heer. (l. c. 41), based on *Liebmann* 425, is mentioned by Heering with a few words of description quite insufficient to permit the recognition of the species in the absence of specimens.

Baccharis hieraciifolia Hemsl. was based on *Bourgeau* 951 and 1230, both from Desierto Viejo, Valley of Mexico. Both numbers, as represented in the

² Contr. U. S. Nat. Herb. 20: 544. 1924.

³ Jahrb. Hamb. Wiss. Anst. 21: Beiheft 3: 40. 1904.

Kew Herbarium, belong to the species with naked petioles, *Archibaccharis hieracioides*. The specimen of *Bourgeau* 1230 in the U. S. National Herbarium, however, is *A. glandulosa* (Greenm.) Blake, with amplexicaul-based leaves.

Archibaccharis salmeoides Blake

Hemibaccharis salmeoides Blake, Contr. U. S. Nat. Herb. 20: 548. pl. 50. 1924.

Archibaccharis simplex Blake

Hemibaccharis simplex Blake, Contr. U. S. Nat. Herb. 20: 547. pl. 49. 1924.

Gnaphalium rhodarum Blake, sp. nov.

Annual, leafy; stem lanate-tomentose and stipitate-glandular; leaves lanceolate, acuminate, green and glandular above, arachnoid-tomentose beneath, short-decurrent; heads rosy, medium-sized, in close glomerules crowded in a small panicle.

Single-stemmed, 24-30 cm. high or more, erect, the stem or the few branches simple below the inflorescence, lanate-tomentose with whitish wool, densely so toward apex, toward base glabrescent, exposing the dense stipitate glands; leaves nearly uniform, 2.5-5 cm. long, 4-8 mm. wide, with attenuate dark callous tips, broadest toward base and decurrent in rather broad wings 3-8 mm. long, repand, very narrowly revolute-margined; heads campanulate-subglobose, about 4 mm. high and thick, glomerate at tips of the usually few and short branches of the panicle, the glomerules 1-1.8 cm. thick; pistillate flowers 37, hermaphrodite 10; involucre 4 mm. high, about 3-seriate, somewhat graduate, the phyllaries broadly ovate to oblong, obtuse or slightly apiculate, somewhat erose, the concealed green base arachnoid, the tips bright rosy or becoming light brown in age; corollas whitish; achenes oval-oblong, plump, 0.7 mm. long, papillose, otherwise glabrous; pappus bristles white, deciduous separately, not thickened above.

COSTA RICA: In paramo, Cerro de las Vueltas, Province of San José, alt. 2700-3000 meters, 29 Dec. 1925-1 Jan. 1926, *Standley & Valerio* 43623 (type no. 1,253,330, U. S. Nat. Herb.); in open forest, same data, *Standley & Valerio* 43961; Cerro de Buena Vista, alt. 3100 meters, 19 Jan. 1891, *Pittier* 3433.

Pittier's plant was determined by Klatt as *Gnaphalium roseum* H. B. K., to which *G. rhodarum* is related. In *G. roseum*, however, the leaves are persistently tomentose above and much less conspicuously decurrent.

The specific name is Latinized from 'ροδαρός,' *rosy*, a word given in Schrevelius' Lexicon but not in Liddell and Scott.

Gnaphalium subsericeum Blake, sp. nov.

Low herb; stem simple, white-lanate-tomentose; leaves rather few, linear, attenuate, green above, closely subsericeous-tomentose with white hairs beneath, not decurrent; heads small, numerous in a small dense cymose panicle; phyllaries narrow, blackish green below the obtusish firm white tips; corollas reddish-purple above.

Stems 11-16 cm. high, erect, solitary (or paired?) from an apparently perennial slender root, densely and subsericeously lanate-tomentose; leaves nearly uniform (the upper only slightly shorter), about 12 above base of

stem, 3.5–6 cm. long, 3–5 mm. wide, attenuate to a callous brownish tip, sessile, not narrowed at base, entire, firm, above deep green, glabrescent or glabrate, very narrowly revolute-margined, the narrow green costa evident beneath; heads campanulate, 4 mm. high, 2.8 mm. thick, glomerate on the very short branches, forming a very dense rounded panicle 3–3.5 cm. thick; pistillate flowers 69, hermaphrodite 8; involucre 4 mm. high, about 5-seriate, rather strongly graduate, the outer phyllaries ovate, obtuse, the inner linear, obtuse or acutish, all with narrow greenish midline below, bordered by whitish, then by a narrow line of shining yellow brown, blackish or greenish black below the white chartaceous apex, thinly arachnoid below; achenes angled, 0.6 mm. long, nearly glabrous; pappus bristles apparently deciduous in groups, those of the hermaphrodite flowers slightly stouter than the pistillate, but not clavate-thickened.

COSTA RICA: Wet meadow, La Palma, Province of San José, alt. 1600 meters, 3 Feb. 1924, *Standley* 32941 (type no. 1,226,057, U. S. Nat. Herb.).

Evidently related to *Gnaphalium salicifolium* (Bertol.) Sch. Bip. (*G. rhodanthum* Sch. Bip.), which ranges from Mexico to Guatemala. In *Gnaphalium salicifolium* the stem is distinctly indurate below or even suffrutescent, and densely leafy, the leaves are less attenuate, persistently tomentose above and not subsericeous beneath, the heads distinctly larger, and the phyllaries usually purple-tinged.

RENSONIA SALVADORICA Blake, Journ. Washington Acad. Sci. 13: 145. 1923. Fig. 1.

This species, the only representative of its genus, was described from three collections made by Mr. Standley in the Department of Ahuachapán, Salvador, in January 1922. The original material was in mature fruit, and did not show the character of the ray corollas. The description of the genus can now be completed from further material of the same species collected in January 1926 at five different localities in the Cordillera of Tilarán, Province of Guanacaste, Costa Rica, at 500–700 meters altitude, by Paul C. Standley and Juvenal Valerio (nos. 44224, 45572, 45828, 46083, and 46455). The specimens are described as collected from erect or ascending, usually subscandent, rarely epiphytic shrubs 1–4.5 m. high, common in moist or dry forest. The following characters should be added to the generic description:

Corollas all yellow; rays 8, fertile, 1-seriate, spreading, about equaling the disk (tube hispidulous above, 1.3 mm. long; lamina oval-oblong, shallowly or rather deeply 2-lobed, with one of the lobes sometimes bidentate, 3.8–5 mm. long, 2.5 mm. wide, hispidulous on back chiefly on the nerves, 8–9-nerved, 2 of the nerves much stronger than the others); ray achenes usually with a pappus of a single stout hispidulous awn or tooth (0.8 mm. long or less) on the inner side; pappus of disk achenes a short, thick, hispidulous-ciliolate crown, usually prolonged into 1–3 unequal teeth or short awns 1.2 mm. long or less.

Hieracium sphagnicola Blake, sp. nov.

Section *Crepidisperma*; phyllopodous; basal leaves oblanceolate, up to 17 cm. long, thin, sparsely long-pilose; stem rather tall, bearing 0–2 elongate leaves below the middle, sparsely long-pilose below, loosely cymose-branched above, bearing 5–8 heads on elongate, flexuous, flocculent, finely glandular, and apically pilose peduncles; involucre narrowly campanulate, 8–11 mm. high, stipitate-glandular and sparsely pilose, chiefly toward base; achenes

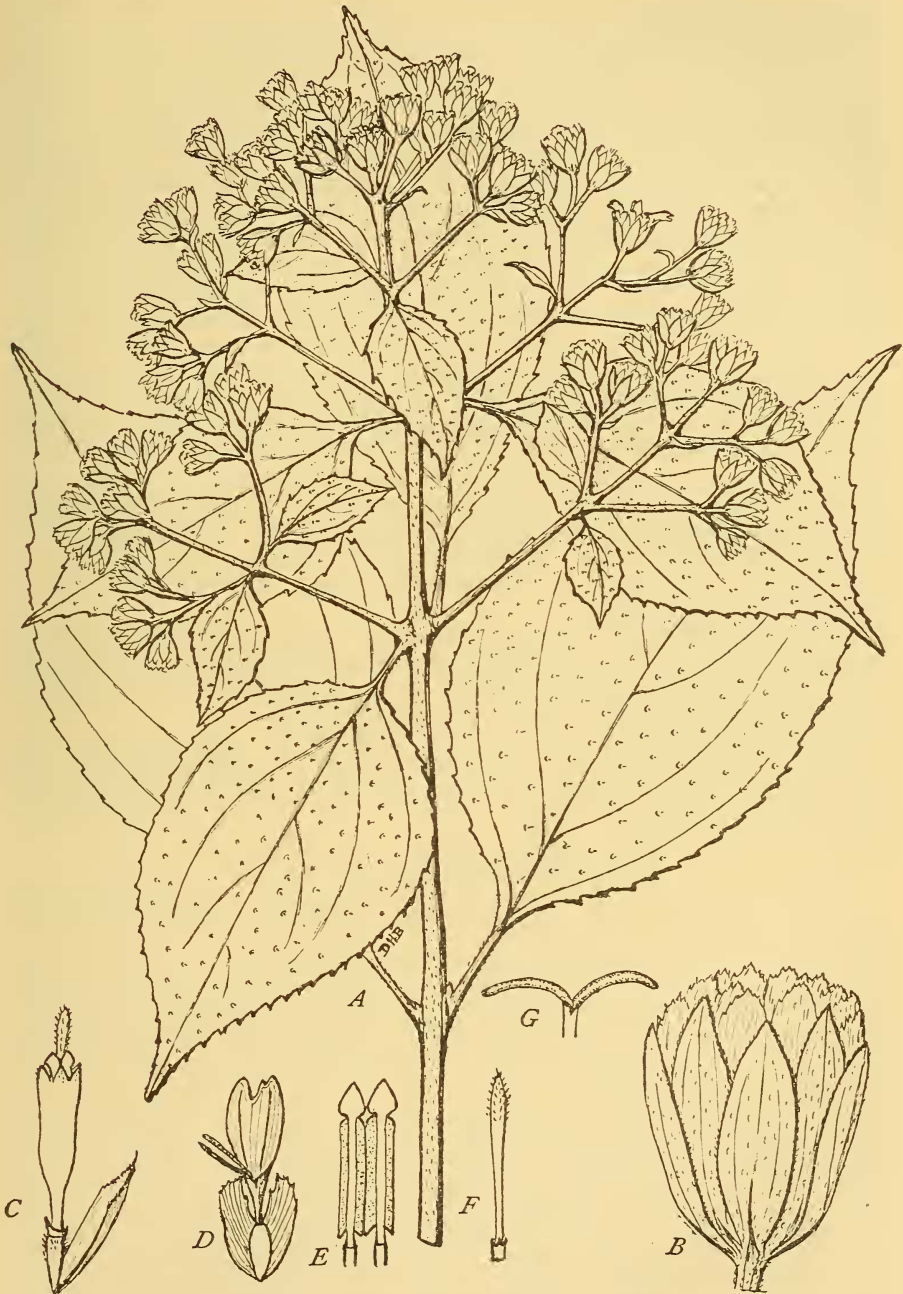


Fig. 1. *Rensonia salvadorica* Blake (drawn from Standley & Valerio 45572).—A, portion of plant, $\times 1$; B, fruiting head, $\times 6$; C, disk floret and pale, $\times 5$; D, ray floret, $\times 4$; E, stamens, $\times 10$; F, style and nectary of disk floret, $\times 10$; G, style branches of ray floret, $\times 10$.

distinctly tapering above or nearly columnar, 3-4 mm. long; pappus brownish, 5 mm. long.

Plants apparently tufted, 35-85 cm. high, from slender, vertical (?) rootstocks; basal leaves oblanceolate or obovate, 7-17 cm. long (including the slender petiole, this 1.5-9 cm. long), 8-18 mm. wide, obtuse or rounded, bluntly callous-apiculate, tapering at base, remotely denticulate (teeth dark, glandular-callous, up to 0.5 mm. long), green on both sides, above sparsely pilose, especially toward margin, with brownish hairs (these minutely hispidulous, about 3 mm. long, with darker brown, somewhat pustulate base), beneath similarly pilose chiefly along costa, the petioles more densely pilose; stem leaves similar to the basal but narrower, 6-11.5 cm. long, 3-7 mm. wide, densely pilose-ciliate at base; stems 1-2 together, very slender, branching above or sometimes from near base, below pilose with loosely reflexed hairs like those of the leaves, practically glabrous near middle, above sordid-flocculent and finely stipitate-glandular with short, several-celled hairs; bracts subtending the upper peduncles small and narrow or minute; peduncles monocephalous, 1.5-5.5 cm. long, flexuous and often divaricate, the glands blackish below, yellowish above, the longer hairs blackish; involucre somewhat graduate, the phyllaries blackish green, lance-oblong or the outer lanceolate, obtuse to subacuminate (the inner 1-1.3 mm. wide), the glandular hairs yellowish-tipped, blackish below; flowers about 23, their corollas yellow, 14 mm. long (lamina 9 mm.), deeply 5-toothed (teeth 3.5-4.5 mm. long), the teeth essentially glabrous; achenes brownish black or purple brown, short-tapering at base; styles pale.

COSTA RICA: Common in open sphagnum bog, Laguna de la Chonta, northeast of Santa Maria de Dota, Province of San José, alt. 2000-2100 meters, 18 Dec. 1925, *Standley* 42139 (type no. 1,252,630, U. S. Nat. Herb.). Also collected at same place and date under no. 42343.

Readily distinguished from *H. irasuense* Benth., *H. standleyi* Blake, and *H. abscissum* Less., the only other species known from Costa Rica, by its foliage and pubescence.

Hieracium standleyi Blake, sp. nov.

Section *Crepidisperma*; phyllopodous, eriopodous; basal leaves small, sparsely long-pilose; stem scapose, short, bearing linear bracts at base of peduncles, otherwise naked, glabrous below; peduncles 3, long, monocephalous, above flocculose, finely glandular, and sparsely pilose; involucre rather broad, 9-11 mm. high, the phyllaries lanceolate to oblong, obtuse to acutish, broad (the inner 1.5-2 mm. wide), pilose at base and along midline, not glandular; achenes obscurely tapering above, 2.5-3.8 mm. long; pappus brownish, 4.5 mm. long.

Perennial, 1-stemmed, 17 cm. high, from a short praemorse rootstock with elongate slender rootlets, pilose-tufted at base with somewhat rusty hairs; basal leaves about 6, obovate, 3.5-4 cm. long (including the petioliform base, this about 1 cm. long), 1 cm. wide, rounded, bluntly callous-apiculate, tapering at base, obscurely and bluntly callous-denticulate, firm, above light green, sparsely pilose (hairs 1.5-3 mm. long, whitish, with small dark pustulate base, minutely hispidulous but not obviously many-celled), beneath pale green, sparsely long-pilose chiefly along costa and the 4-5 pairs of lateral veins; scape 3-headed, the unbranched portion 1.8 cm. long, practically glabrous, the lowest peduncle 13.5 cm. long, 1-headed and with an abortive lateral head, subtended by a linear-spatulate bract 2 cm. long and 1 mm.

wide, sparsely pilosulous below, above loosely flocculose and densely short-glandular with small, blackish-based, many-celled, yellowish glands, toward the head also loosely pilose with blackish-based hairs, the 2 other peduncles about 7.5 cm. long; involucre campanulate, 7–10 mm. thick (as pressed), rather strongly graduate, the outermost phyllaries lance-triangular, 2–4 mm. long, obtuse, blackish-green, pilose at base and along midline (the hairs blackish below, whitish above), the inner phyllaries about 13, narrowly oblong, obtuse, or acutish, thinner and paler above, with black, sparsely pilose midline; corollas "bright yellow," about 10 mm. long (lamina 7 mm. long), with 5 glabrous teeth (1.3–1.8 mm. long); achenes deep purple-brown; styles blackish-green.

COSTA RICA: Scarce, in paramo, Cerro de las Vueltas, Province of San José, alt. 2700–3000 meters, 29 Dec. 1925–1 Jan. 1926, *Standley & Valerio* 43624 (type no. 1,253,331, U. S. Nat. Herb.).

This species, represented by a single specimen, is apparently nearest the Mexican *Hieracium junceum* Fries, but is abundantly distant in involueral characters from that species as described in Zahn's monograph.

BOTANY.—*Fourteen new species of plants from Hispaniola.*¹ E. C. LEONARD, U. S. National Museum. (Communicated by PAUL C. STANDLEY.)

The fourteen species of flowering plants here described from the island of Hispaniola belong to several families, and all but three are based upon material collected by the writer in the course of his visit to the mountains of northern Haiti during the winter of 1925–26. Of the two exceptions, one is a *Brunfelsia* found by Dr. W. L. Abbott on the Samaná Peninsula, Dominican Republic, and the other two are new grasses from Furcy, southern Haiti, described by Agnes Chase from specimens obtained by the writer on a visit to that region in company with Dr. Abbott, in 1920.

Phthirusa siegeri Leonard, sp. nov.

Stems branched, erect or ascending, 20 to 50 cm. high, glabrous, the upper internodes compressed narrowly winged, broadened at the nodes, the lower internodes terete, light gray; leaves firm, leathery, oblong-obovate or oblong-elliptic, 4 to 7.5 cm. long, 1.5 to 3 cm. broad, rounded or obtusish and apiculate at apex, gradually or somewhat abruptly narrowed to a short (2 to 5 mm. long) petiole, glabrous on both surfaces, drying olive-green, the midrib on lower surface and the petiole sharply triangular in cross-section, the lateral veins 3 or 4 pairs, inconspicuous in younger leaves; flowers 2 to 4 in racemes 1.5 to 3 cm. long, in the axils of the upper leaves, the rachis light gray-furfuraceous, flattened, broadened at the insertion of the pedicels; pedicels 1 to 2 mm. long, gray-furfuraceous; cupule shallow, about 2 mm. long, 4 mm. broad, gray-furfuraceous, obscurely lobed, the lobes deltoid, obtuse; calyx

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